

Terms of Reference

Design, Development, Installation and Implementation Support of Web-based Management Information System (MIS) for the Early Childhood Development Sector in Sri Lanka

Background Information

The World Bank supported Government of Sri Lanka's Early Childhood Development (ECD) project implemented by the Ministry of Women and Child Affairs (MWCA) aims to enhance equitable access to and improve the quality of ECD services in Sri Lanka. Specific activities under the project include:

- (i) Improving the quality of ECD provision across the country;
- (ii) Expanding equitable access to ECD services across the country;
- (iii) Improving the quality of ECD services in the Plantation sector, and;
- (iv) Project management, and monitoring and evaluation.

Under the project, a dedicated Project Management Unit (PMU) has been established and will be responsible for conducting a number of tasks. It will implement activities directly related to the Project, including overseeing activities undertaken by all implementing units; and coordinating monitoring and evaluation activities, and establishing, maintaining and updating a web-based Management Information System which will cover in its scope both the overall ECD sector in Sri Lanka as well as project activities.

Monitoring of Sri Lanka's ECD sector currently relies on ad-hoc, non-systematic and non-periodic collection of limited information by the Children's Secretariat (CS) and Provincial ECD Bodies (PECDBs). Fragmented data from different sources have to be used to estimate enrollment, participation, attendance, and the impact on children of their exposure to ECD services. Monitoring and evaluation capacity is uneven across different agencies, and the information collected by them is often outdated. There is no central MIS to keep track of related ECD information including the financial expenditure data. It is in this light that a robust MIS is envisioned as a requirement for the ECD sector in Sri Lanka, as also for successful implementation of the project. Therefore, the Project will help build an ECD sector MIS for the timely and systematic collection of complete and reliable data on all ECD centers in the country.

Objectives of the Assignment

The main objective of this assignment is to design, develop and operationalize a web-based MIS system with database application that will assist its users (administrators and global clients) to send, access, analyze, process, and convert data into useful information using various search, sort, filter, and rank queries accessible both on local intranet and internet.

The specific objectives of this assignment are:

- To develop and establish fully functional computer based MIS covering MWCA, CS, PECDBs, Plantation Human Development Trust (PHDT), District ECD Coordinators, Divisional ECD Officers, and ECD centers as necessary.
- To design and develop web-based as well as hand-held mobile database application for online data entry and inquiry.
- To ensure flexibility in database design to adapt/accept the changes in data that may be required in future management.
- To establish PMU as an ECD data coordination center.

Broad Scope of Work

This procurement is for the design, development, installation and deployment of web-based MIS software for ECD. The selected firm/ company shall be responsible for analyzing the requirements, designing, developing and supporting the implementing the MIS software system, at MWCA, CS, PECDBs, PHDT, ECD Coordinators at District Secretariats, ECD Officers at Divisional Secretariats, and ECD centers level, as well as live operation of the system within the time frame stated in the document¹. The MIS design will be modular, and the selection of modules will be done in consultation with the PMU. An indicative set of modules is provided in Annex 1.

Detailed Scope of Work²

General

1. Conduct a system requirement study. Specify required software, hardware, networking architecture and other infrastructure to support the MIS.
2. Plan and design the MIS, with set access levels for CS, PMU, Provinces, PHDT and ECD centers. Prefer to use Agile development methodology for the design and development of the portal to ensure all requirements and feedbacks of the client are identified and incorporated.
3. Review existing ECD related data collected through census and administrative sources at CS, PMU, Provinces, and PHDT. Develop and pilot standardized formats that will be used for the purpose of collecting data. Convert the formats for ICT enabled use through work stations and mobile handheld technology. This will be integrated with the MIS. The software and hardware should be capable of recording location through the use of GPS, and uploading pictures and videos.

¹The selected firm/ company shall be in regular consultation with PMU during analysis, design, software development, and especially implementation support and training of related users to ensure smooth functioning of the software.

²The selected firm/ company must be capable of providing enough manpower, and other resources and equipment to perform the entire scope of work.

4. Carry out broad discussion with the MWCA, CS/ PMU, PCs, PHDT, ECD Coordinators at District Secretariats, ECD Officers at Divisional Secretariats and ECD centers in the process of designing, development and installation of MIS software.
5. Develop a fully functional computerized MIS, with set access levels for CS, PMU, PECDB, PHDT and ECD centers. The software and hardware of the system will have provision for web-based as well as mobile based, on-line data entry as well as off-line data entry where data can initially be entered/saved locally and uploaded to the central database directly from the local files. Install and test the software and demonstrate its functionality. The software and hardware of the hand-held devices should be capable of recording location through the use of GPS, and uploading pictures;
6. Install MIS data collection forms on work stations and hand held devices.
7. Provide operational and technical training for the users of the modules of the MIS. Hold workshops for the orientation of project teams at PMU and PHDT, officials at provincial, district and divisional level in the use of the work stations and mobile handheld technology.
8. Prepare guidelines/ user manual for the use of the technology by all users at the state/ national, provincial, district and divisional levels. These guidelines will be in English, Sinhala and Tamil. Guidelines will include FAQs that will be regularly updated based on the experience of users. Guidelines will also describe alternative methods for users in case there are problems in the field.
9. Implement the system at scale and conduct annual performance audit of the system up to a period determined by the PMU to ensure proper functioning and trouble shoot any problem areas identified by the audit.

Key Characteristics of the MIS

1. Provides user-friendly, web-based, mobile based, online data entry/ access, inquiry, and reporting facilities.
2. Provides option of first entering the data off-line and storing locally in mobile phone, and uploading the data to the central database later when internet is available.
3. Provides options of downloading the entered data in different formats such as in Ms-Excel, etc.
4. Maintains authenticity (needs to be verified and approved if inputted by ECD Officers) of the information sent from ECD Officers and data entered at MIS implementing agencies³.
5. The data collected from ECD centers level in the national census 2016 should add to MIS database. MIS should be able to store and maintain time series data.
6. Seamless integration with mobile hand-held technological devices.

³MWCA, CS, PECDBs, PHDT, District ECD Coordinators, and ECD centers

7. Maintains various levels of ECD data management i.e., ECD center/ Child Development Center level data, Divisional Secretariat Division level data, District level, Provincial level, PHDT level and PMU level.
8. Provides tools for basic data analysis and table outputting (such as producing summary statistics, simple graphs, trend plots, etc.)
9. Provides facilities for generating and printing different reports including, inter alia, output tables, summary statistics and figures on result framework indicators, e.g., Children enrolled in ECD centers (all/ girls); ECD centers meeting national quality standards (all/ plantations); ECD centers conducting annual child development assessments; number of project beneficiaries(all/ females); ECD trainers completing TOT (all/ females); Persons completing ECD certificate/ diploma/ degree courses (all/ females); ECD teachers and teacher assistants completing standardized short-term training (all/ females) etc and other relevant progress information.
10. Provides flexibility to add/ delete/ modify attributes to data records.
11. Ability to import/ export data from/to other database software such as Ms-Excel, Ms-Access, SQL Server, SPSS, MySQL.
12. Able to generate user-defined tables as well as tables created by system based on user queries, which are available in the system.

Technical (IT) Specifications of the MIS software/ database

Data management and functioning

1. The portal development is recommended to be implemented using an Open Source Languages framework based on PHP and HTML.
2. The database for the application is recommended to be implemented using open source database such as MySQL. The software shall be compatible with all major browsers and operating system.
3. The product has enough flexibility to accommodate the frequent changes and open to customization as required for the future.
4. Content management system (CMS) should be enabled.
5. The software shall be flexible and scalable in terms of performance and functionality.
6. Able to run on Intranet when there is no internet connection.
7. The software product should provide user manual, content design document (high level design, data model, etc.) and any other documentation of the assignment has to be completed and handed over to the client.
8. Should have a dynamic access menu control.
9. Software should support use of multiple users at a time.
10. The response time of the software system should be as under:
 - For data transactions like add, update, edit, delete etc.:- Response time will be less than one seconds or less.

- For complex transactions:- Response time will be two seconds but in any case time for completion of the transaction shall not exceed five seconds.
- Response time for “help, exit/ entry of menus, scrolling or paging, error processing etc.” shall be one second or less.

Security and data integrity

1. Software should be free of any propriety/ licensing. ECD Project shall be the sole owner of the source code, intellectual properties and patent rights.
2. Should have the necessary security safeguards mechanism.
3. Provide data integrity features that will prevent more than one user from changing the same information simultaneously.
4. Provide multiuse access to data, along with security features that prevent some users from viewing and/ or changing certain type of information.
5. The software shall provide Logon ID and password for any users who use the system with basic level of data entry, data modification, and update, add/ delete records.
6. The software should provide audit trails and logs mechanism for content changes performed by system users.
7. Administrators shall be able to view and modify all information in MIS.
8. Any modification (insert, delete, and update) for the database shall be coordinated and done by administrator.
9. Check data integrity for all applicable variables.
10. Provision of data warehousing and data mining.
11. Should provide proper data backup and recovery procedure.

Service Level Agreement

Provide one year warranty after the user acceptance sign-off. During this period, the firm/ company is responsible for update patches, fix bugs and make some minor changes.

Deliverable

1. Inception report including work schedule
2. System Requirement Study.
3. Periodic progress report according to work schedule (Weekly report compulsory)
4. Operational manual of the system - for the MIS and for the hand-held device sub-system.
5. Installation of the system on server and software on handheld devices.
6. Testing and Deployment of the system
7. Workshops and training to the users
8. Implementation Report
9. Completion Report System delivered on DVD with source code.

Eligibility Criteria

1. Firm/ company should be in existence for at least five years and must be in the business of secure (mainly authentication, encryption, and integrity etc.) web-based software design, development, installation and deployment the software products during the said period.
2. Firm/ company must have successfully designed, developed, and installed at least two Secure (Authentication, Encryption, and Integrity) On-line Data Collection and Processing related Software or Secure Web-based Software.
3. Firm/ company must have, at least one, successfully designed, developed, installed and commissioned such secure web-based software in any organization.
4. The firm/ company must be capable of providing enough manpower, financial resources and equipment to perform the entire scope of work mentioned herein.
5. In case of Joint Venture, the role and responsibility of each partner should be clearly furnished.
6. For the short-listing purpose, specific (technical) experience of the lead firm/ company and financial strength of both Lead and associate firm/ company would be considered.
7. Short-listing of firms/ companies shall be based on the pre-defined evaluation criteria.
8. Firms/ companies may submit the list of third-party support (i.e., Sub-consulting firms/ Sub-contractor), if it is required for this project.
9. Firms/ companies, either single or member of Joint Venture can apply only in one EOI. To avoid confusion and possible elimination after short-listing, Lead Firms of Association or Joint Ventures are strongly advised to confirm relationships (exclusive or non-exclusive) with selected associates or partner prior to expressing interest.
10. In addition to authenticated hard copy, the firm/ company must submit information/ documents in soft copy.

Requirement by the Applicant

Qualification

Educational Qualification, Training and Work Experience of all key staff should be in IT and detail knowledge GoSL's ECD sector functioning modality. Project team leader/ consultant should have at least Master in Engineering/ Computer Science or IT plus an acceptable credential in Project Management and programmers must have at least bachelor degree in IT.

Operational Experience

At least 5 years experience of operations in software development and installation.

Specific Experience

- Experience of successful design, develop, commissioning and support of web-based **On-line Data Collection and processing related Software in the last five years.**

- Firm/ company must have, at least one, successfully designed, developed, installed and commissioned such web-based MIS software for any college or government departments or government corporation or public limited organization.

Technical Experiences/ Capabilities

The firm/ company should list all the similar projects completed within the past five years and provide detail information for each of those projects and submit the Certificate of Specific Work Experience of the firm/ company must be attached with EOI Application Form, which must be issued by respective clients and must include, among other things, name and nature of assignment, location of the assignment completed, duration and period of the assignment, duration of stay/ work in the assignment, assignment value etc.

Documents

The firm/ company should submit attested copies of academic qualification, training and experiences of key staff proposed for this project. The Certificate of Training should indicate the subject of training, date, period of training, location etc. The Certificate of Specific Work Experience of the key staff must be issued by respective clients and must include, among other things, name and nature of assignment, location of the assignment completed, duration (mm-yyyy) and date of the assignment, duration of stay/ work in the assignment, assignment value etc.

Financial Strength

The firm/ company should submit audited financial statements for the last three fiscal years. In addition to the above qualification requirements, the consultant shall be required to be legally registered and must submit the up to date Company Registration Certificate and Tax clearance/ Tax Return Submission Receipt for the last fiscal year along with the application.

Annex 1: Suggested set of Modules

1. Children Secretariat module (in consultation with the CS according to their requirement)
 - Activity implementation and financial data/ information
 - ECD Centers
 - Divisional Secretariat Divisions
 - District
 - Reports
 - Photos (ECD centers, activities and events)
2. PMU/ PHDT module
 - Activity implementation and financial data/ information
 - PMU
 - PHDT
 - Internal and external reports
 - Photos (ECD centers, activities and events)
 - Financial data extract from Financial MIS
3. Provincial ECD bodies module (in consultation with the Provinces according to their requirements)
 - ECD center registration data/ information
 - Activity implementation and financial data/ information
 - Reports
 - Photos (ECD centers, activities and events)
 - Resource center information
4. ECD center data module
 - National census data of ECD centers 2016
 - Annual census 2017 - 2020 as planned